

REMARKS

Claims 15, 17, 20, 22-30, and 32-42 are pending in the application. Claim 15 has been amended to increase the percent identity to 75% as recited in original claim 21. Claim 30 has been amended to incorporate the elements set forth in claim 31. No new matter has been introduced by these amendments.

Claim 18 has been canceled because it relates to subject matter that was previously canceled. Claim 31 has been canceled as duplicative.

Claims 15, 20, 30, 33, and 34 have been amended to address the Examiner's informality objections.

Rejection under 35 U.S.C. § 112, first paragraph-enablement

The enablement rejection applied to all of the pending claims was maintained. The Examiner acknowledged Applicants' arguments and the Rule 132 Declaration by Dr. Peter Vander Horn, but considered these arguments not to be persuasive. No specific reasoning was articulated in the Office Action as to why Applicants' arguments, which were additionally supported by objective evidence, were considered insufficient. In short, the Examiner reiterates his position that the specification does not establish: regions of the nucleic acid binding domain that can be modified without effecting binding activity; the general tolerance of the domain for modification, and a predictable scheme for modifying amino acid residues of the domain with an expectation of obtaining the desired biological function. He also argues that the specification provides insufficient guidance as to which of the many possible choices is likely to be successful.

Applicants have fully rebutted this rejection. In brief, the level of knowledge in this art is high. There is a large body of art in this field that provides detailed structural insight into the interaction of Sso7d protein (as well as the related protein Sac 7d protein) with DNA. Exemplary references are provided in the specification. Furthermore, Dr. Vander Horn provides objective reasons justifying the 75% identity recited in the current claims. For example, in section 13 of his declaration, Dr. Vander Horn has created a hypothetical hybrid protein based on the sequences of Sso7d and Sso7d homologues Sac7d, Sac7e, and Sac7a to derive a domain that

has 76% identity to Sso7d. Moreover, Applicants have provided examples in the specification showing that both Sso7d and its homologue Sac7d increase processivity when joined to polymerases. Thus, in view of the teachings in the specification, the advanced state of the art, and the evidence provided by Dr. Vander Horn's Rule 1.132, Applicants respectfully submit that the claims are enabled.

Applicants believe that all of the outstanding issues raised by the Examiner have been fully addressed and the claims are in condition for allowance

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

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